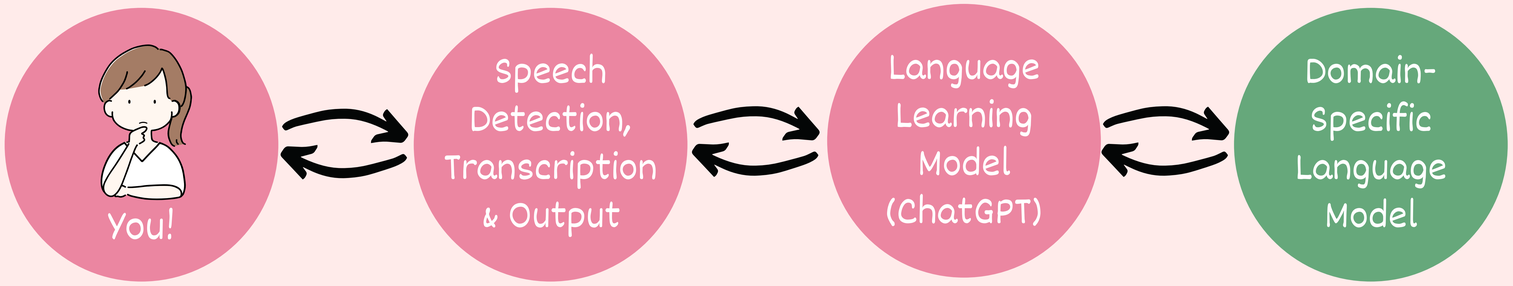
THE BRAINS OF THE OPERATION

Backend: Creating a Domain-Specific Language for Voice Programming



Why do we need a custom language?

Why not use Voice Assistants (Siri)?
- Limited functionality
- No feedback loops

Why not use just LLMs (ChatGPT)?
- Hallucinations: nonsensical output
- Cannot reliably perform tasks

We need a system that is correct, precise, consistent, and scalable!

Designing and Building Our Language

Our CalEvent language consists of:
- An OOP AST design, a Library of CRUD commands to the Google Calendar API, and a specification

Results and Findings:
- Our backend "sanity checks" LLM output and evaluates the code
- A constrained language allows for greater safety but less expressivity

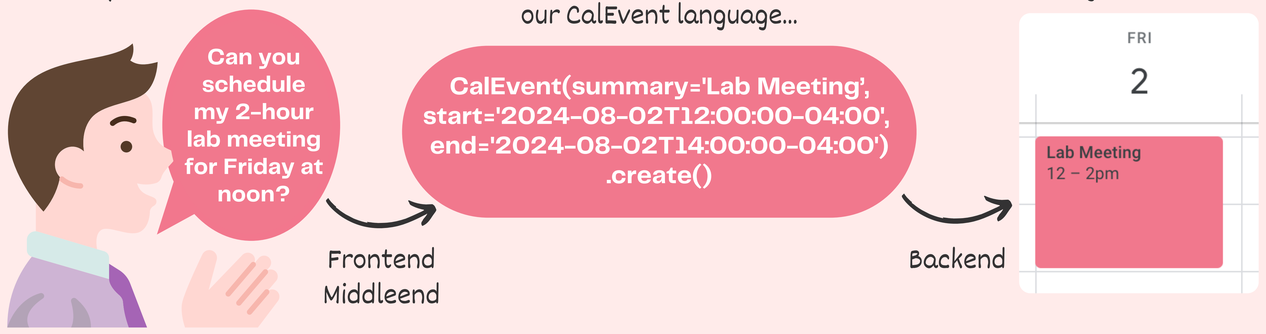
Next Steps

Our ultimate goal:
- Create a general-purpose voice programming language that can be used in a wide variety of applications

How we can achieve this:
- "Plug in" capabilities for more domains:
  - Google Maps, Recipe Maker
- Incorporate GPL features:
  - loops, conditionals

The "Constraint-Safety Tradeoff"

Our open research question: How can we build a system that is both powerful (expressive) and safe?



ClippyCal's CalEvent Language

Our object-oriented programming language contains these methods:

- find
- get
- create
- update
- listEvents
- delete

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